

REMARKS

By this amendment, Applicants have amended the specification without adding new matter, cancelled claims 4 and 6 through 9, and amended claims 1, 5, 10 and 11.

The Examiner has objected to claims 1, 4-11 because of the following informalities: terminologies used in the claims are inconsistent with the specification, such as:

“Resistive divider” should be read as –resistive voltage divider–.

Specification refers “capacitive” and not “capacitive divider” as claimed.

Claim 1, page 3, line 14 “said low frequency signals” should correctly be –said low frequency signal–.

To avoid lack of antecedent basis in the claims 8-10, “a first resistive path” needs to be defined in independent claim 1.

Appropriate correction is required.

The Examiner has rejected claims 1 and 11 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Figure 3, it appears “a high frequency signal path” is inputted to amplifier (310) and “a low frequency signal path” is outputted to a common center tap (node). However, it is not clear

how elements (C301, R301) and (C302, RO302) are parallel connected.

It is not clear which capacitive divider is intended.

The Examiner has rejected claims 1 and 11 under 35 U.S.C. 102(b) as being anticipated by Link et al. (5,796,308).

Link et al. (Figs. 3 04 4 or 5) disclose a single ended attenuator comprising: an input terminal (Vin) and an output terminal (Vout); capacitors (C1, C2) can be read as high frequency signal path coupled between input and output; resistors (R1, R2) can be read as low frequency signal path in parallel with high frequency signal path and coupled between input and output; a multiplier (17) can be read as a variable gain amplifier; wherein in the compensation is inherently seen by adjusting gain of the low frequency signal through the resistances.

Claim 12 is allowed.

Claims 4-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in the Office action and to include all of the limitations of the base claim and any intervening claims.

The Examiner states the reasons for indicating allowable subject matter are:

Claims 4-10, 12 are allowed over the prior art because none of the prior art disclosed

or suggested showing the particular structure and/or operation recited in these claims namely: a variable gain amplifier having the connection and function thereof.

Claims 4-7 call for, among others, an inverting amplifier (440) and a second resistive path having the connection thereof.

Claims 8-10 call for, among others, the attenuator further including a second resistive path having the connection thereof.

Claim 12 calls for, among others, a feedback capacitor (C902) shown in Figure 9 having a connection thereof.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional reference (Nelson (4,507,618) shows further analogous prior art circuitry.

The art is deemed relevant and should be carefully reviewed before any amendment is filed.

Applicants have amended the specification describing Figures 4 and 5 to correspond to the language in the claims. The claims, as originally filed, recite resistive and capacitive dividers as well as depicting such dividers in the drawing figures. Applicants have amended the specification to specifically describe the capacitive dividers shown in Figures 4 and 5 of the drawing figures.

Applicants have amended claims 1 and 5 to overcome the Examiner's objections to the claims. Claim 1 has been amended to recite a resistive-capacitive voltage divider as described in the amended specification and shown in the drawing figures. Claim 8 no longer recites "a second resistive path" thus removing the necessity of defining "a first resistive path" in claim 1. Regarding the Examiner's objection to the phrase "said low frequency signals" in claim 1 at page 3, line 14, claim 1 recites "providing gain adjusted low frequency signals" at page 3 lines 16-17 of the instant response which provides the antecedent basis for the phrase "said low frequency signal" at page 3, lines 24 and 25. Applicants further amended claim 1 to overcome the Examiner's rejection under 35 U.S.C. 112, second paragraph. Claim 1 now recites a resistive-capacitive voltage divider where a first portion of the divider has at least a first parallel capacitor and resistor coupled between the input and output terminals of the attenuator and a second portion coupled to a common center tap of the first portion having a capacitor coupled between the common center tap and a point of reference potential and a resistor coupled to said common center tap.

Claim 11 corresponds to the embodiment of the invention shown in Figure 5. In the embodiment of Figure 5 as set forth in claim 11, the electronically adjustable attenuator has an input terminal and an output terminal and a high frequency signal path having a

capacitive voltage divider coupled in parallel with a low frequency signal path having a resistive voltage divider. The resistive and capacitive dividers have a first common input terminal coupled to the input terminal, a common center tap coupled to the output terminal for conveying high and low frequency signals from the input terminal to the output terminal, and a second common terminal coupled to a point of reference potential. A variable gain amplifier has an input terminal coupled to the common center tap and an output terminal coupled through a lowpass filter to the output terminal of the attenuator with the low pass filter selecting low frequency signals for providing the gain adjustment for the low frequency signals. As shown in Figure 5, the capacitive divider is coupled in parallel with the resistive voltage divider between the input terminal and a point of reference potential. Further, neither Link et al nor Nelson teach, hint, or suggest a variable gain amplifier having an input terminal coupled to the common center tap and an output terminal coupled through a lowpass filter to the output terminal of the attenuator with the low pass filter selecting low frequency signals for providing the gain adjustment for the low frequency signals. Neither Link et al. nor Nelson teach, hint or suggest the use of a low pass filter configured this manner in an electronically adjustable attenuator.

Applicants' claimed invention is to an electronically adjustable attenuator. Claim 1 recites a first embodiment of the electronically adjusted attenuator having an input terminal and an output terminal. A resistive-capacitive voltage divider has at least a first capacitor coupled between said input and output terminals for conveying high frequency signals from said input terminal to said output terminal and at least a first resistor coupled in parallel with said at least first capacitor for conveying low frequency signals between said input terminal and said output terminal. The first capacitor and resistor have a common center tap coupled to at least a second capacitor coupled between said common center tap and a point of reference potential and a second resistor coupled to said common center tap. A variable gain amplifier has an input terminal coupled to the common center tap of the first capacitor and resistor and an output terminal coupled to the other end of second resistor for providing gain adjusted low frequency signals. An inverting amplifier receives the gain adjusted low frequency signals, and generates an inverted representation of the gain adjusted low frequency signals at an output. The inverted representation of the gain adjusted low frequency signals is coupled to the input terminal of the attenuator by a resistive path coupled between the output of the inverting amplifier and the input terminal of the attenuator, wherein the attenuator is compensated by adjusting gain of said low frequency signals conveyed by said low frequency signal path.

Neither Link et al. nor Nelson teach, hint or suggest a resistive path coupled between

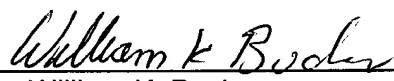
the input terminal of the attenuator and the output terminal of an inverting amplifier for coupling inverted representations of gain adjusted low frequency signals to the input of the attenuator for compensating the attenuator by adjusting gain of said low frequency signals conveyed by said low frequency signal path.

In view of the cancellation of claims 4 and 6-9, the amendments to claims 1, 5, 10 and 11 and the accompanying remarks, Applicants respectfully request that the Examiner withdraw the objections to the claims 1, 4-11, the rejection of claims 1 and 11 under 35 U.S.C. 112, second paragraph, and 35 U.S.C. 102(b), and pass this case to issue.

In accordance with current Patent Office practice, the Examiner is expressly authorized to call the undersigned agent at the number listed below if it is deemed the application is in other than condition for allowance or if prosecution can be expedited.

Respectfully submitted,

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